



# CATS

## NEWSLETTER

The Official Journal of the Capital Area Timex/Sinclair Users Group

### Presidential Ramblings

Despite a smaller crowd, the usual comradarie and sharing took place at the January meeting. (I have a feeling that the change in meeting date to one so near the Holidays was less responsible for absenteeism than the competing loyalty of Redskin fans!).

Cliff Watson demonstrated so many gadgets for the TS1000 and 1500 that he's both purchased and improvised that I simply couldn't keep up with his demonstration. The many questions and comments from the other members proved their interest. His wealth of technical knowledge of both the "innards" and the capabilities of all the machines he has learned to use (and this list is a long one) is amazing. If you would benefit by his know-how, drop him a line at 600 West Drive, Glen Burnie MD 21061 (include a SASE, please).

When Cliff's demonstration sailed over my head, I used those minutes to peruse our books of other group's NLs. I noted that VISTA has a Tape Library. They have 9 tapes (389 programs) for the TS1000 and 4 tapes (171 programs) for the 2068 for sale at \$4 @ tape. Write Tony Willing, P.O. Box 199 Vashon, WA 98070.

And from SWYM (Seattle) I saw that Bill Ferrebee is authorized to distribute Stan Lemke's PIXEL PRINT (now public domain), and he's working on a Plus version of Professional Desktop Publisher V5.0. Write Bill at 749 Hill Street #9, Parkersburg WV 26104.

(Bill writes the Timex Sinclair column in Vulcan's COMPUTER MONTHLY, successor to COMPUTER SHOPPER.)

This reading reminded me of a brief article I read some time ago. Unfortunately, I neglected to note its source, but I quote it here: "If virus is suspected check with PRINT FREE immediately after power-up, and then after loading the program and removing it with CLEAR:DELETE. just make another PRINT FREE. If there is a difference between these 2 numbers, then you do have a problem."

And, for what it's worth, I share a discovery I made yesterday. After experiencing what I initially diagnosed as "freezing" three times almost immediately after power-up, in hindsight I realized 'twas operator error, not a QL shortcoming.

Instead of checking the Status area when I found no response either to attempts to move the cursor or from hitting F3, I jumped to the conclusion that a "freeze" had occurred. In reality, I had failed to complete the GOTO command after loading a doc file. I merely keyed in "g" after F3, but failed to follow with either "t", "b", or a page number.

Had I either completed the command or hit ESC, I would not have had to reset and reload. This is an example of my failure to take advantage of the many helps that are built into the Psion programs - if one takes the time to read them!

Continued on Page 10

## Contents

Presidential Ramblings	1
From The Editor	2
GENie Information Service	3
Estate Planning	4
Mandelbrot Set	5
Little Languages	6
The Good, the Bad, and the, uh, QL?	8
SNUG Update	10
Prime Numbers	11

## Key Dates

- 9 February: CATS Meeting  
11:00? Workshop  
2:00 Executive Board Meeting  
2:30 General Meeting
- 11 February: Newsletter Deadline  
For the Next Issue
- 2 March: CATS Meeting

## Next Meeting:

**9 February - 2:30 - 5:00**

Abacus - Akin will razzle and dazzle us with  
his knowledge of Abacus.

## From The Editor:

This month's issue is not as big as last month's. I don't think we'll have any more that big. I was not aware that we had a limit on the number of pages. The last issue put the newsletter into another postal weight category, so we had to pay some more postage. The way we had it before, we were just under the weight for the one category.

In this month's issue we have an interesting article by Herb Schaaf. It seems he is interested in finding out why the QL is so "fritzy" for some people, while others (like myself) have hardly had any problem with thier QL. Is it related to how early the QL is, or related to environmental conditions, etc?

I hope you all will take a minute and write down the specifics on your QL and send it to Herb. With QL's being a dying breed, we need to learn how to keep our's up and going for a few years more.

Believe me, I'd be lost with out my QL. Yes, I could pick up a IBM Clone and do my work on it, but it would not be as much fun as working with the QL. Plus virtually every program that could be written has been done on the IBM. Not much fun for us programmers, when we know somebody else has done it.

Last month Lee Gayman made a plea for a calendar program that keeps track of birthdays, etc. In rummaging through the QUANTA library I found a program called CALENDAR on disk #6. It prints out a calendar for the year, with the special dates printed below each month. Lee, this might fill your need, at least in the short term. Take a look at it and see if it will work for you. If you do not have a copy of that disk, there are a number of people in the group that have the QUANTA library.

Please note the new meeting time!!!

Happy Hacking,

*Tim*

# GENie Information Service

By Dave Bennett

Those of you using modems may or may not be aware of the large Information Services available to you. Most likely you can access them with a local phone call if you live near a city with a population of 50,000 or greater.

The most famous is probably CompuServe. This is a very good service. I was a member for several years. There is a Timex Sinclair Sig located in the Computer Club Forum.

But then I switched to the GENie Service primarily because of support of the Z88 in the Laptops Roundtable. At the time there was little or no support of the Z88 on CompuServe.

Most of you know from my articles that I am just crazy about the Z88. It is a fantastic computer. It can do some things that are impossible for other 8 bit machines. But I am getting off track here.

GENie has separate Bulletin Boards called Roundtables. These are further subdivided into Categories and then into Topics.

At the time that I joined GENie the Z88 had a Topic in the Laptops Roundtable. Since then we now have a Z88 Category. Maybe in the future there will be a Z88 Roundtable. There certainly seems to be enough Z88s being sold to justify it. You do need a sponsor for a Roundtable though.

Currently the sponsor of the Laptops Roundtable is Traveling Software. They make Link-up software for PCs. In the past they produced Tandy Model 100 products.

The earlier Sinclair related computers such as the QL and the 2068 are supported in the TI Roundtable under Category 13

Orphans. Currently there are only topics available.

Right now there are few if any messages being written for these machines and no files are being uploaded. I think that if more people contributed there can at least be a 2068 and QL Category.

There is some incentive in joining GENie rather than CompuServe. GENie just reduced their rates. There are some other information services out there. One is a mainly IBM service called Prodigy. Prodigy just reduced their services to \$5.00 a month. In response GENie now provides over 100 services including Electronic Mail and an Electronic Encyclopedia at \$4.95 a month. Any interests besides computers can be supported for this price.

Any of the Computer Roundtables and all of the download areas in the Roundtables are not supported under this plan. You must pay \$6.00 an hour for 300, 1200 and 2400 baud to access these.

But still this is significantly less than CompuServe. They have rates of \$6.00 an hour for 300 baud and \$12.50 an hour for 1200 and 2400 baud. For some reason CompuServe does not offer flat rates like the other services.

GENie is part of the General Electric Company. Their offices and computers are located in Rockville Maryland. Their Computer Network has phone numbers located in most larger cities.

To join GENie call 1-800-638-9636 (voice). Or set your modem for half duplex at 300 or 1200 baud. Dial 1-800-638-8369. Upon connection enter HHH. At the U# prompt enter: XJM11999, GENIE. There will be a brief explanation and you will be given the opportunity to sign up.

You should have a major credit card handy or you can have the fees deducted from your checking account. Your permanent password will be mailed to you. You will also get a User's Manual and a subscription to the GENie Magazine LiveWIRE.

## **Estate Planning**

*By George Ray*

### Introduction

Don't snicker at the title, it may be later that you think. I've had a will in effect for over 30 years and I know it needs updating. However, I thought it would be a good idea, this time, to know exactly what it says, means, and the implications of it all, rather than take a lawyer's say so as to what's in my will.

Add to this a do-it-yourself inclination and belief in self sufficiency and I am led to do my will myself this time around.

Of course a major consideration in doing so is the fact that I have a computer (QL) with an excellent word processor (Quill) to help me and allow me to change, alter, and revise drafts till I get what I want in words, structure and then make mirror copies with ease for my wife's will and any others by merely replacing my name with hers or theirs, and thus produce home made wills.

So with the incentives and the tools available to update my old will all I need to know is what lawyers know, that is to say the ins and outs of wills, terminology (lingo), state laws, and probate proceedings.

Well this is where the wheat separates from the chaff and has led me to look into trusts (revocable living trusts) as will supplements and the need for overall estate planning.

I now realize Wills, Trusts and Estate Planning should be done together.

Estate planning, in essence, is the identification of one's assets, tax consequences of them upon death and their treatment on one's death, all of which are a vital consideration to start with. Fortunately one's assets can be formulated in a clear and meaningful manner using a numbers processor (Abacus on my QL) and so I have done.

Unless there is no interest in this subject to CATS members, I hope to write a series of articles hereafter, based on my specific needs and circumstances, cautions, interpretations, concerns, and quest to reduce the expense of this so-called "civilized method" of passing on my baton (assets) to my heirs without feeding the sharks the bulk of my assets for the mere privilege of dying.

So next issue I'll mention the most important Lingo (terminology) to understand, then follow up issues will include The Will, Trusts, Estates, Powers of Attorney's, and The Wrap-up.

I have always admired the uncivilized (?) indians who passed their baton's to whomever they wished, walked into the woods and died. Civilization does not allow this efficient transfer anymore. Now you need a living will just so you can die, which is inevitable, and have an attorney in fact to enforce your right to die.

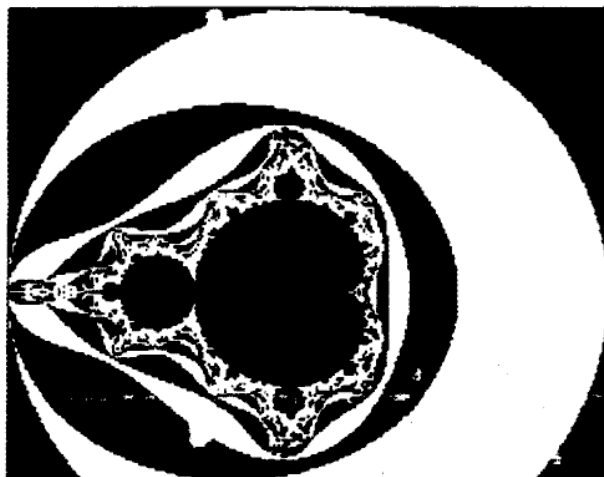
I wish all my readers to know and realize I am not giving legal advice, but merely my interpretation of the multitude of what I studied over the last few years. I will make some statements which I believe to be true, but they may not be.

All of this fudge -- a legal disclaimer, as if I needed one,

which I don't, after all look at the press, they print what they want, almost, and use the First Amendment as a shield. Why not me? See you next issue.

## Mandelbrot Set

[This is a version of the Mandelbrot Set program sent in by Stuart Walton. It was converted to the 2068 by Stuart's nephew, Neal. Neal converted the program from memory and had never used the 2068 before. Not a bad feat. - Ed]



MANDELBROT FRACTAL IMAGE  
LowX=-2  
HighX=2  
LowY=-1.3207547  
HighY=2  
Black stripes 1-11 odds  
Central black area is n=100.

```

8 INPUT "HighY";hy: LET y=hy
-dx=22/25.5: LET ix=dx/255: INPUT
T "Stripping(1 to 97)";stripe: CL
S
7 LET dy=hy-ly: LET iy=dy/175
20 LET e=hy: FOR y=175 TO 0 STEP
EP -1: LET d=lx: FOR x=0 TO 255:
LET f=d: LET g=e: LET n=1
21 IF f*f+g*g>=4 THEN GO TO 30
22 LET n=n+1: LET ff=f*f-g*g+d
LET g=2*f*g+e: LET f=-ff IF n>
=100 THEN GO TO 40
23 GO TO 21
30 IF n>stripe THEN GO TO 41
31 IF n/2=INT (n/2) THEN GO TO 41
41
40 PLOT x,y
41 LET d=d+ix: NEXT x: LET e=e
-iy: NEXT y
50 INPUT "Enter any key to pri
nt";a$: COPY
51 LPRINT "MANDELBROT FRACTAL
IMAGE": LPRINT "LowX=";lx: LPRIN
T "HighX=";hx: LPRINT "LowY=";ly
: LPRINT "HighY=";hy: LPRINT "Bla
ck stripes 1-" ;stripe; " odds=";L
PRINT "Central black area is n=1
00.": INPUT "Print another COPY
(y/n)";a$: IF a$="y" THEN GO TO
50
52 GO TO 1
1000 REM **MANDELBROT REVEALED**
*****By Neal Hicks*****
1010 REM Fractal Math is a new
and exciting field, which is
allowing scientists to under-
stand natural processes which
had up till now been eluding
normal math techniques. Chaos
is the language of nature, from
branches of a tree to turbulence
in the air to the twisting net-
work of capillaries in the human
body. Fractal math describes
all these simply and elegantly,
while 'normal' math would fail
utterly.
1020 REM The Fractal equation
this program explores was disc-
overed by Benoit B. Mandelbrot
while he was working for IBM.
Any equation in the form I will
describe below will produce a
fractal shape, but this was one
of the first and is considered
a 'classic' as a result.
1030 REM A fractal image lives
on the complex plane, not on a
cartesian coordinate grid. On a
cartesian grid, location is
measured by 2 numbers (x,y), so
many locations share the same x
or y address.
1040 REM On the complex plane,
the x-axis is the axis of Real
Numbers, and the y-axis is the
axis of Imaginary Numbers, in
units of the square root of -1.
Together, these two coordinates
define a unique complex address
in the form (x+yi) where 'i' is
to indicate the imaginary part.
Each spot on the complex plane
is a unique complex number.
1050 REM The equation for the
Mandelbrot fractal is amazingly
simple:
1060 REM NewZ=(OldZ)squared+C.
1070 REM It is a recursive form-
ula, applied over and over to
each pixel on the screen until
certain conditions are met. The
variables lx,ix,ly and hy define

```

```

1 BORDER 1: PAPER 7: INK 0: C
LS
2 PRINT "LowX and HighX defin
e the left and right boundaries
of the screen. HighY defin
es the top boundary of the scre
en, and the program calculates L
owY so that the final image will
be in prop-ortion when COPY-ed
to an Alpha-com 32 printer.
The Mandelbrot fra
ctal lives inside a circle of r
adius 2, so entries that are not
between -2 and +2 will yield so
lid black screens. I recommen
d your first screen be LowX=-2, H
ighX=2, and HighY=2, Stripping to
11. Use this image to find a
reas you want to study closer
. Run times 24-144 hrs. See REM
s for more!"
3 REM program NEAL
5 INPUT "LowX";lx: INPUT "Hig
hx";hx: LET dx=hx-lx

```

the location of each edge of the screen's "field of view" on the complex plane, and calculations using increments ix and iy within loops x and y assign a unique address on the complex plane to each pixel on the screen, in the form (d+ei), which is the complex constant C in the equation above. Also, for each pixel, Z is (f+gi), which is initially set to 0 (0+0i). n counts how many recursion have been performed.

1075 REM (NOTE--Since Z is 0 and the first recursion yields (0)squared+C=0, I skip a step on line 20 by just setting f and g equal to d and e, and setting n=1 rather than 0, and going directly to the first test at line 21)

1080 REM You are wondering, how can a computer do math involving the square root of -1? All you have to do is keep the real and imaginary parts separate. Thus:

1090 REM New(f+gi)=Old(f+gi)+2+(d+ei)

1091 REM =Old(f+2+2fgi+(gi)+2)+(d+ei)

1092 REM =Old(f+2+2fgi-g+2)+(d+ei)\*\*\*\*remembering that i\*i=-1

1093 REM Now, separate the reals from the imaginaries:

1094 REM New(f)=Old(f+2-g+2+d)

1095 REM New(g)=Old(2+f+g-e)

1100 REM This is the guts of the program, the recursion on line 22. ff is a temporary holder for Newf, since we need to preserve Oldf for the 2nd part of the formula. f=ff sets things straight, and the counter n is upped. Once the recursion of the pixel's complex address is performed, we jump to the test at 21 unless we've recursed 100 times without satisfying 21's test. If so, we are in the central mass of the fractal set, and we jump right to 40, turn the pixel black.

1110 REM Now I'll explain what 21's test is for, what 100 recursions has to do with anything and what the stripes are for. 1120 REM The Mandelbrot image is the mathematical limit of that recursive equation I described above. That is to say, the picture this program produces is a picture of how the equation behaves when recursed. You start out with a pixel's complex address in the screen's field of view, and each recursion of that initial complex number produces another one, and another, so the resulting numbers jump about on the complex plane, since each complex number is a unique spot on the plane. And, like a turtle race, the "goal line" is a circle of radius 2 from the origin (0+0i) which line 21 tests for.

1130 REM If the point in question exits the circle in less than 100 recursions, we call that spot divergent, and color it according to n in alternating

areas of black and white to distinguish areas of similar behavior (lines 30-40). The area outside the circle of radius 2 is n=1, black. The next stripe in is n=3, then n=5, and so on up to the value of Strips. 1140 REM If n=100 and we are still in the circle, we call the point convergent, or divergent so slow that we got bored and gave up. This is the central mass of Mandelbrot, whose edge bristles with extravagant detail waiting to be explored with this program.

1150 REM The reason to stop with 100 recursions is that each area of similar behavior (value of n) fits closer and thinner, like skins on an onion. There isn't much difference between n=99 and n=100, or for that matter n=200. Setting the limit to 200 would double run time without any real benefit, and the program runs slow enough! For the same reason, if you aren't zooming in close and you stripe to 97, the edge of the fractal will be obscured in a haze of stripes too close to be distinguished. In the starting image I suggest at the start of the program, use stripe to 11. If you zoom in to small areas, and the unstriped area is large, add more cautiously. 1160 REM Each area where the stripes are disturbed or stretched out represents a branch, perhaps too small to see, of the central fractal pushing them out like a wake before a ship. You may even find a tiny version of the larger image hanging by an unseen strand, but it will still be as different from its parent as a snowflake, full of detail of abstract, otherworldly beauty

1170 REM Enjoy!--Neal M. Hicks  
2421 N. High St. #5 Columbus OH  
43202 Commodore-64 user.

## Little Languages

By Tim Swenson

### Lexical Analyser:

The first part of any translator or compiler, is the lexical analyser. A lexical analyser takes the "words" of a program and breaks them up into parts that it understands. It separates the operators ( +, =, \*, etc), the reserved words (FORWARD, RIGHT, LEFT, etc), and variables. It does not check to make sure the program makes any sense. All operators and reserved words are broken down to "tokens". The word FORWARD is translated to just F. It is easier for the program to

handle F than FORWARD. All words that are not operators or reserved words are considered variables and are stored in thier full length.

Below is the procedure LEX. It takes in a file name of a Little LOGO program, opens the file, runs it through the lexical analyser, and sends output to a file. If you look at this file, you will see a token or variable on each line. This file will be used in the next step of the program, the syntactical analyser.

By definition, Little LOGO uses spaces between it's words. This makes it easy for the lexical analyser to see each word. The procedure finds each word and runs it through the evaluator. The evaluator decides which operator or reserved word the word is. Note that most of the procedure evaluator is nothing but nested IF statements. The SELECT statement for SuperBasic is not useable for strings, only numeric variables, so I was forced to use an un-elegant nested IF construct.

DEFine PROCedure lex

LOCAL onn, off, length, in\$, temp\$, drive\$, in\_file\$, out\_file\$, beg, ennd

off = 0  
onn = 1

CLS

INPUT "Enter Drive to Use  
(flpl, ram1, etc) :";drive\$  
INPUT "Enter Name of Little LOGO  
File: ";in\_file\$

in\_file\$ = drive\$&in\_file\$  
out\_file\$ = drive\$&"lex\_out"

OPEN\_IN #4,in\_file\$  
DELETE out\_file\$  
OPEN\_NEW #5,out\_file\$

REPEAT loop

beg = 1 : ennd = 1  
token = off

INPUT #4, in\$  
IF EOF(#4) THEN EXIT loop  
length = LEN(in\$)  
IF in\$="" THEN REPEAT loop

REPEAT loop2

IF in\$(ennd)<>" " THEN  
token = onn  
IF in\$(ennd)=" " AND token  
= off THEN beg = ennd+1  
IF (in\$(ennd)=" " OR  
ennd=length) AND token = onn THEN  
IF ennd=length THEN  
temp\$ = in\$(beg to  
ennd)  
ELSE  
temp\$ = in\$(beg TO  
ennd-1)  
ENDIF  
upper(temp\$)  
eval(temp\$)  
beg = ennd + 1  
token = off  
ENDIF

ennd = ennd + 1  
IF ennd > length THEN EXIT

loop2

END REPEAT loop2  
END REPEAT loop

CLOSE #4  
CLOSE #5

END DEFine lex

DEFine PROCedure upper (a\$)  
LOCAL x, temp

FOR x = 1 TO LEN(a\$)  
temp = CODE(a\$(x))  
IF (temp > 96) and (temp <  
123) THEN a\$(x) = CHR\$(temp-32)  
END FOR x

END DEFine upper

DEFine PROCedure eval (a\$)

IF a\$="FORWARD" OR a\$="FD" THEN  
PRINT #5,"F"

ELSE

IF a\$="RIGHT" OR a\$="RT" THEN  
PRINT #5,"R"

ELSE

IF a\$="LEFT" OR a\$="LF" THEN  
PRINT #5,"L"

ELSE

IF a\$="BACK" OR a\$="BK" THEN  
PRINT #5,"B"

ELSE

IF a\$="CLEARSCREEN" OR  
a\$="CS" THEN  
PRINT #5,"C"







There have also been a number of changes that are aimed at keeping transients, spikes, noise, hash, etc. from getting into the QL, such as capacitors and/or metal-oxide-varistors (MOVs) across the power line and various filters/choke combinations ahead/behind the PSU. (It seems to me that the thyristor in the PSU is a source of transients !)

Once inside the QL, we find people changing the 5 volt regulator/heatsink by going to larger capacity versions. We also hear about the use of ferrite beads on extra buss wire(s) for the 5 volt lines with star or ring distribution schemes, smoothing capacitors of all sorts, some putting 10 mfd tantatalums with .001 mfd. about anywhere they'll fit, along with a few strategic 100,000 mfd. brutes at the extremities.

Then there are those that do away with the QL PSU entirely and install their own custom designed super smooth extra cool best of breed power supplies, or some selected alternate source of power.

So much for some of the 'Power to the QL' mods. Now we also hear about all the things that go on inside the QL. How about the ROM version? What if any difference do they make? What do you get when you 'PRINT ver\$'? What about the chip set? Is your 8301, 8302, 8049, set of a particular run or vintage? Can you figure out the QDOS version by looking at the 4 bytes from 49142 to 49145?

How about all those Tom Bent mods? Extra current to the 68008 chip, despiiking capacitors on the memory chips, buffering capacitors between the CPU and 8301, buffering chips for the RGB outputs, bypasses for the 8049, RS-232 chips, and many others I probably haven't caught up with yet.

Then too, have you used special ROM chips, or one of the anti-rollover chips? Did you pull out or leave in the TV driver chip?

What else is plugged in? Trump cards or other interface/RAM devices? How about those disk drives, mdvs? Has your Trump card had the resistors changed? What version of Trump etc. are you using?

Software can have bugs in it, especially earlier versions. What versions of the PSION suite are you working with? What other programs to you have resident while QL'ing, such as Taskmaster, Lightning, Speedscreen, ICE, QRAM, etc. that might contend for control of QDOS? Do some programs seem to work without a hitch, while others give you cause for doubts (not counting the ones we program ourselves, they are naturally above suspicion and couldn't possibly cause trouble.)

What about your display device and/or printers? How close is the monitor to the QL? How have you got those cables and ribbons of wire laid out to the TV/monitor, disk drives, modems, etc.? Sometimes they can be too close, and sometimes too far?

Do you get any inklings about incipient lockups, like a few odd pixels or patterns of them changing color, or a general slowing down of things?

How's your working environment? Hot and dry, static-prone, higher elevations working on insulated surfaces? Or down in a wet/damp/humid basement on grounded metal table? Do you live in splendid isolation away from man-made noise, radio and TV towers or in a busy congested RF polluted zone?

Any thing about the mean time before failure? Or the time of failure? Other operating habits, procedures, good luck charms, rituals, fetishes, that you observe or disregard that might account for or contribute to your luck or lack of luck?

Now you've probably thought of some things that might make a difference that we haven't mentioned. Tell us please!

I'll be happy to try to collect this sort of information from the CATS members and try to make sense of it. It might be another good way to make more use of Archive programming too.!

## SNUG Update

By Dave Bennett

If you are a SNUG member no doubt you have noticed that things have been rather quiet lately. I have not heard anything from SNUG since the June 2nd meeting at the Milwaukee Sinclair Fest. The last Newsletter (SNUG Roundup) was received about a month before the June Fest.

The Executive Board asked me to find out what was going on. Finally I received a reply from Mel Nathanson who was a past President of SNUG and is the current Treasurer.

Apparently Paul Holmgren has been having some personal problems. Paul is the current President and Editor of SNUG Roundup.

There is a possibility that the TIMELINEZ Newsletter will be incorporated into SNUG Roundup and Don Lambert will be the new Editor. Don formerly edited the CRAGIST Newsletter out of Cedar Rapids, Iowa.

I have been wondering just how many CATS Members are members of SNUG. So I would like to take a poll. If you are a member of SNUG drop me a line or see me at the meeting. If you have some comments or questions about SNUG include them as well. I will forward them to the appropriate person to hopefully get answered.

Dave Bennett

SNUG Liaison

(I've included this tidbit on the outside chance that among our readership is someone else operating on the same First Grade level that I am. And I'm counting on the usual support of the many "gurus" in our ranks by their refusal to make fun of us as we struggle to make better use of our Sinclair machines.)

I'm looking forward to the interim meeting at the Linthicum Library. If you don't join us there you'll read a report in the next NL.

"Nuff for now,

RUTH



# The News is Out!

## AND WE'RE SPREADING IT!

RMG is adding so many NEW and EXCITING ITEMS to our line that our storerooms are BULGING! We have added more than 25 NEW PAGES and changed over 20 others in our 816 48+ page catalog. We want to make sure that you do not miss out on anything we may be able to help you with in your computing. If you will send us \$3.00 you will receive our catalog with a \$3 off coupon for your first order. AND, send along 12 business size SASEs and you will receive 12 monthly updates and special mailings. \$5 discount coupon in first mailing!

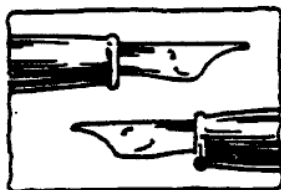
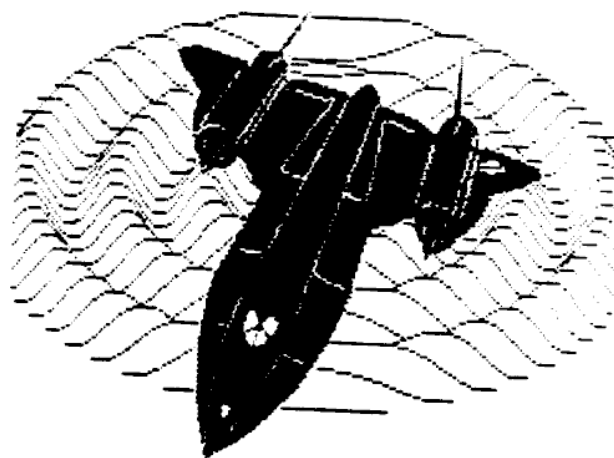
**RMG ENTERPRISES**  
1419 1/2 7TH STREET  
OREGON CITY, OREGON 97045  
503/655-7484 \* NOON-10 TUE-SAT

*By G. Glider*

```

000000      ** * * * * NUMB=          +
000001      ** * * * * G. Circle+    +
000002      ** * * * * +++++++       +
000003 INPUT "Input number of cents
000004 to stop": BPRINT a
000005 IF a=0 THEN STOP
000006 LET b=INT(a/4): LET c=b
000007 LET d=b*c: IF d=a THEN LET
000008 b=(INT(a-1)): REM PRINT a,"X"
000009 c=b*c
000010 IF d+a THEN GO SUB 300
000011 IF d THEN LET c=INT(c+1)
000012 IF a/d <= b THEN LET c=-1
000013 IF c=0 THEN GO TO 300
000014 IF b+c THEN GO TO 300
000015 GO TO 30
000016 LET b=b/1.5: LET c=c/1.5: R
000017 ETURN
000018 PRINT INK @b:"X"@c="":b=c:
000019 INK @: GO TO 30
000020 STOP
000021 CLEAR : SAVE "prime1" LINE

```



```

1234
2X617=1234

123456
192X643=123456

12345678
846X14593=12345678

6.7059274E+8
18107X37035=6.7059274E+8

15637X42885=6.7059274E+8

14295X46911=6.7059274E+8

12345X54321=6.7059274E+8

```

CATS Page 11 Feb 1991

CATS maintains a gratis exchange of newsletters with approximately 30 Users Groups across the U.S. and Canada. Groups not sending a newsletter to us for six months are automatically taken off the list.

- |                          |                                    |                                   |                                       |                                       |                               |                                  |                                  |   |                                    |                                  |
|--------------------------|------------------------------------|-----------------------------------|---------------------------------------|---------------------------------------|-------------------------------|----------------------------------|----------------------------------|---|------------------------------------|----------------------------------|
| President<br>Ruth Fegley | 1st Vice President<br>Hank Dickson | 2nd Vice President<br>Tom Robbins | Recording Secretary<br>Audrey Currutt | Corresponding Secretary<br>Joe Miller | Treasurer<br>Barry Washington | Members-at-Large<br>Duane Parker | Akin Olowofoyeku<br>Cliff Watson | Immediate Past President<br>Bill Barnhart | Newsletter Editor &<br>Tim Swenson | contact person<br>(703) 820-6657 |
|--------------------------|------------------------------------|-----------------------------------|---------------------------------------|---------------------------------------|-------------------------------|----------------------------------|----------------------------------|---|------------------------------------|----------------------------------|

**The Capital Area Timex/Sinclair Users Group** is a not-for-profit group devoted to serving the interests of those who own, use, or are interested in the Timex/Sinclair family of computers.

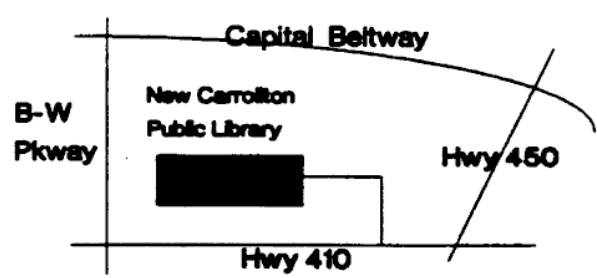
**Executive Board**

**Meetings**  
Monthly meetings are held from 11:00 AM to 4:30 PM, on the second Saturday of each month, at the New Carrollton Public Library. Newsletter Memberships cost \$15 per year, are good for 12 months, and include all privileges (access to libraries, group buys, etc.). A newsletter only subscription is available for persons living outside the Washington Metro area and is \$12 per year.

**Networks**  
Timex SIG on CompuServe: Wednesday night, 10:00 PM Eastern time (GO CLUB). CATS BBS: (301) 588-0579. 8-N-1. 300/1200 baud. News and general information, 24 hours a day.

CATS Newsletter  
P.O. Box 11017  
Takoma Park, MD 20913

# FIRST CLASS MAIL



The next meeting of CATS will be held on: February 9, 1991

- ? 11:00 AM Workshop
- 2:30 PM General Meeting **2:30 P.M.**

At: New Carrollton Public Library 7414 Riverdale Road (Hwy 410), New Carrollton, MD

**IF YOU ARE NOT A MEMBER OF CATS. THIS IS THE ONLY ISSUE YOU WILL RECEIVE**